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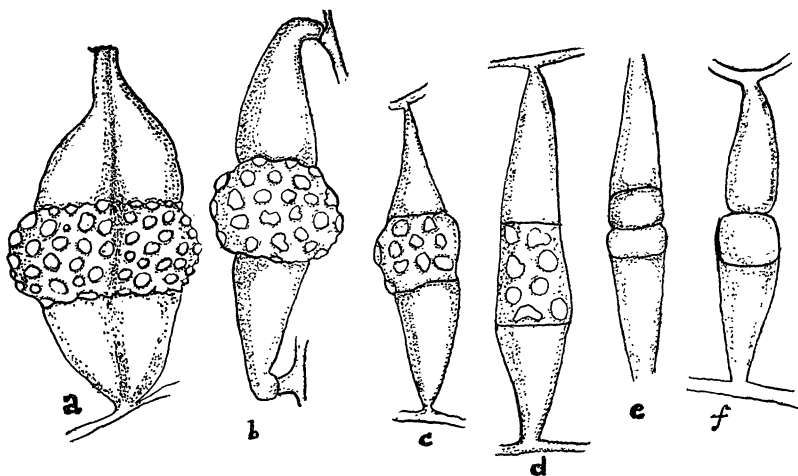
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## Mycological Notes. \*

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### I. ZYGOSPORES OF MUCOR STOLONIFER.

In the course of a series of cultures of various species of *Mucor* there was obtained a number of zygospores of *M. stolonifer* Ehrenb. (*Rhizopus nigricans* Ehrenb.) These appeared the latter part of April, in a stender dish culture on a decoction of rye bread. Except for size they were typical of the species; but measured only 80-90  $\mu$ , or about one-half the size usually recorded. Inoculations from this culture to bread were made with the results that a good growth of mycelium was formed and numerous gametes produced. From some cause, the nature of which was not determined, very few zygospores were produced, and these were none of them strictly normal. While no cytological study was made, a careful gross examination of the protoplasmic contents of both cultures was made. In the first culture the zygospores were completely opaque, black in appearance, and upon rupture of the episore a very distinct oil drop was visible. In the second culture, even the apparently matured zygospores in addition to being smaller in size



\* The observations upon which these notes are based were made while a student in the laboratory of Dr. J. C. Arthur at Purdue University, La Fayette, Ind.

were less opaque, dark chocolate-brown in color and with the tubercles clearly discernable in the unbroken episore. The protoplasmic contents were sparse and the oil globules small and numerous. That these were not immature stages is shown by the fact that three or four weeks time produced no change in the culture.

A series of camera-lucida drawings were made of several of the abnormalities found in the culture. The typical zygospor of the species is subglobose and borne between a pair of almost equal suspensors which taper from the spore to the hyphae from which they arise and with which they are continuous. The zygospor represented at figure *b* is normal except in regard to the suspensors which are separated from their hyphae by septae and are sharply curved at the base. Figures *c* and *d* represent types of poorly developed zygospor both of which were very light brown and almost destitute of protoplasm. Figures *e* and *f* represent parthenospor. These are formed by a single gamete and are said to have the same function as the zygospor. The term "azygospor" is usually applied to these spores but with questionable propriety as, being formed without the union of gametes, either equal or unequal, they are certainly not entitled to be called zygospor. Moreover, the term azygospor is not used to designate similar structures among the zygosporic Algae, nor are equivalent spores among the oosporic Algae and Fungi referred to as "anoospor." Figure *e* represents both the gametes as having formed smooth, light colored spores, while in figure *f* but one spore was formed, the other progamete not even cutting off a gamete.

By far the most interesting of these abnormal spores is that illustrated in figure *a*. This spore has the appearance of being double in structure; but at no point were the suspensors entirely separated, although both suspensor and spore were deeply grooved. This abnormality may have been formed by the fusion of closely approximated gametes; or, as is to the mind of the author much more probable, we have here an example of fasciation in the moulds.

## II. A NEMATODE IN HYDROGERA KLEINII.

While engaged in a study of the local species of *Mucorales* of Tippecanoe County, Indiana, a mass of horse dung which was covered with *Hydrogera Kleinii* (van Tiegh.) Kuntze, (*Pilobolus Kleinii* van Tiegh) was brought into the laboratory the 16th of October. The sporangiophores averaged a centimeter in height and were of a bright yellow color. The spores were large (14-20  $\mu$ )